

Pilot call for access to the services of the Spanish node of ERIHS, the European Infrastructure for Heritage Science.

I Description of the call

E-RIHS (European Research Infrastructure for Heritage Science, www.e-rihs.eu) is a distributed infrastructure, in process of constitution as an ERIC, for the development of research in cultural and natural heritage in aspects that include its interpretation, conservation, documentation and management. It is composed of a transdisciplinary collection of tools and services and also of expert knowledge to advance in the understanding and preservation of heritage, offering access to an interdisciplinary community of Heritage Science researchers.

E-RIHS is configured as a distributed infrastructure with central headquarters, in Florence, Italy, and national nodes. Currently, the **Spanish Node of E-RIHS** (E-RIHS.es) is constituted by three CSIC institutes (Centro Nacional de Investigaciones Metalúrgicas, CENIM; Instituto de Química Física Blas Cabrera, IQF; and Instituto de Geociencias, IGEO), Instituto del Patrimonio Cultural de España (IPCE), the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH), Centro de Conservación y Restauración de Patrimonio Cultural de Castilla y León, Universidad de Barcelona (UB), Centro Nacional de Aceleradores (CNA), the Universidad del País Vasco/Euskal Herriko Unibersitatea (UPV-EHU) and the Servicio de Conservación, Restauración y Estudios Científicos del Patrimonio Arqueológico (SECYR) from Universidad Autónoma de Madrid (UAM)

E-RIHS services are offered via three platforms: FIXLAB, for access to large and medium-sized infrastructures; MOLAB, with mobile equipment for in-situ measurements; and ARCHLAB, providing access to sample collections and scientific archives.

Following this scheme, **the Spanish Node of E-RIHS offers heritage researchers access to the national services of three platforms through this call in competitive concurrence.** The objective of the call is to give access to advanced tools and services, developed by inter-disciplinary groups, for the development of research projects in heritage science that address complex issues, to users working on the advancement of knowledge about heritage and innovative strategies for its preservation.

This call is funded by the CSIC Program for Large European Research Infrastructures 2022, grant INFRA20004, and with the own resources of the participating access providers.

II Type of access and facilities provided

This access call is aligned with the principles and procedures designed for the European Infrastructure and that have been and are applied in IPERION CH and IPERION HS European infrastructure projects. Likewise, the terminology used to define the characteristics of the services offered is the one designated in these projects, and can be consulted in Annex I.

The facilities provided and the number and approximate duration of each access available in this call for proposals are as follows:

(a) **FIXLAB**, for access to state-of-the-art research facilities with equipment that cannot be moved to the location of the object under study:

Service and Techniques	Provider	No. of accesses	Duration (days)
Basque Infrastructure for the Integral Study of Materials from Cultural Heritage (BISMaCH) <ul style="list-style-type: none"> • Raman Imaging System (532 nm, 633 nm and 785 nm) • FTIR (transmittance, diffuse reflectance and ATR mode) • Laboratory EDXRF Imaging System • Laser-Induced Breakdown Spectroscopy ion chromatography and ICP-MS for soluble salt test 	IBeA (EHU-UPV)	1	5
Dating and Material Characterization Lab <ul style="list-style-type: none"> • Radiometrical dating • Material characterization by analytical techniques and chemometric data treatment 	Sección Química Analítica (UB)	1 1	5 5
Ion Beam Analytical techniques: PIXE, PIGE and RBS Tandem 3 MV and Cyclotron	Centro Nacional de Aceleradores	1	1-2
Laser Laboratory for Heritage Science. <ul style="list-style-type: none"> • Non-linear Optical Microscopy • Laser-Induced Breakdown Spectroscopy • Laser-Induced Fluorescence • Laser Cleaning 	IQFR (CSIC)	2	3-5
Petrolab <ul style="list-style-type: none"> • Techniques for testing surface and bulk physical and hydric properties • Chemical-mineralogical techniques for the characterization of stone materials. 	IGEO (CSIC-UCM)	1	1-3

b) **MOLAB**, mobile research laboratories consisting of portable or transportable instruments and other associated equipment for in situ measurements:

Service and Techniques	Provider	No. of accesses	Duration (days)
METAL.es <ul style="list-style-type: none"> • Electrochemical impedance spectroscopy 	CENIM (CSIC)	3	3-5
Petrolab <ul style="list-style-type: none"> • Techniques for testing surface and bulk physical and hydric properties • Chemical-mineralogical techniques for the characterization of stone materials. 	IGEO (CSIC-UCM)	2	1-3

c) ARCHLAB, Research facilities consisting of local physical and digital archives and collections useful for heritage research, such as images, analytical data and reports ("grey literature"), conservation documentation, samples and reference materials, existing in museums, monuments, research and conservation institutions:

Service and Techniques	Provider	No. of accesses	Duration (days)
Archivo del Centro de Conservación y Restauración de Bienes Culturales de Castilla y León	D.G. de Patrimonio Cultural, Consejería de Cultura, Turismo y Deporte (JCyL)	3	1-2
Archivos del Instituto de Patrimonio Cultural de España	IPCE (MCD)	1	3-5

The characteristics of each of these services are detailed in the Spanish Node Catalogue of Services (<http://www.e-rihs.es/inicio/catalogo-de-servicios-del-nodo-espanol-de-e-rihs/>).

III Beneficiaries

This call is open to researchers in the field of Heritage Science belonging to public or private non-profit institutions (OPIs, Universities, Conservation Centers and Schools of BBCC, Museums, Foundations, etc.). The cultural assets of interest for the proposed projects must be under public ownership.

IV Submission of applications

Applications should be submitted using the form available on www.e-rihs.es, and sent by e-mail to e-rihs@csic.es. Applications must include the following information:

- General information (title, objectives, scientific discipline)
- Participants
- Proposal description
- Service(s) for which access is requested

Applications will be open from 20 November 2023 to 31 January 2024, for accesses scheduled between March-June 2024

If required by the project, access to more than one service and platform may be included in a single application.

Users are advised to contact the access providers and the E-RIHS.es User Helpdesk (e-rihs@csic.es) during the preparation of the proposal in order to discuss the scientific and technical details of the proposed access.

V Funded costs

ERIHS.es will bear the following expenses derived from the accesses, including the scientific and technological support for the development of the research projects:

FIXLAB and ARCHLAB services include the facility's personnel costs for carrying out the accesses and the direct and indirect costs of providing the service in the laboratory or archive. Travel, subsistence and insurance costs of the users are not included.

MOLAB services include, in addition to those indicated in the previous paragraph, the travel and accommodation costs of the facility's equipment and personnel to the user's location;

In turn, users are responsible for all other expenses incurred for access, and specifically for:

- any insurance costs (if necessary) for the artwork/object under investigation and its personnel for the duration of access,
- provide any specific logistics (scaffolding, health and safety requirements, ancillary equipment or materials) to use the equipment in appropriate conditions. These requirements are specified by each of the services. For MOLAB services safe storage for equipment during the access should be provided.

VI Evaluation and selection of proposals

Once the applications have been submitted and their suitability to the call for proposals has been verified, the proposals will be evaluated by a peer review panel from a technical and scientific point of view, taking into consideration:

- The technical feasibility and adequacy of the analysis of the proposed project.
- The scientific quality of the proposal, within the field of conservation and scientific studies of cultural heritage, according to the following

Evaluation criteria (0-100 points):

- 35 points: Scientific excellence
- 25 points: Assessment of the state of the art of the topic and advancements in the field
- 20 points: Valorisation and dissemination plan
- 15 points: Expertise of User Group
- 5 points: Potential impact

The selection of proposals will be made on the basis of the rating obtained and the number of access facilities available for each service. Each access facility will make a final decision concerning the extent of access provided to the User Group (number of days, period of the visit, facility's internal rules, IPR issues, etc.).

A minimum score of 50 points will be required for acceptance of the proposal.

The results will be published on the E-RIHS.es website and notified by e-mail to the interested parties.

VII Access Policy

By submitting a proposal, users declare that they have read, understood and agree to the following access policy:

Access refers to legitimate and authorized physical, remote and/or virtual admission to, interactions with and use of the E-RIHS.es services offered to users. Such access may be granted to,

but is not limited to, machine time, IT resources, software, data, data communication services, sample preparation, archives, collections, experiment setup, execution and disassembly, expert support, and analytical services.

The duration of an access is measured in access units. E-RIHS.es is responsible for the definition of the access units, which may vary from precise values such as hours or beam time sessions to calendar days of access.

At the end of the selection procedure, the users, together with the access provider, will reach a written agreement on the conditions of access, signing a User Agreement detailing the particular conditions of access.

Users shall provide the access provider with all information known to them about the object or artifact that may be relevant to the safe conduct of the examination or relevant to the preparation of the examination. In some cases, providers may ask users to authorize preparatory procedures essential to perform the requested analysis (e.g., high-resolution imaging of the artifact).

Users will only use the services for professional activities related to Heritage Science research.

Users are responsible for obtaining the relevant permissions (if applicable) and ensuring the ethics and best practices for the study of the heritage assets, and compliance with applicable laws and regulations of the host institutions, especially safety regulations.

Users shall also comply with and not deliberately violate the terms of use and data policies determined by the access provider.

Intellectual Property

The concept of co-creation of new knowledge between access providers and users is at the core of the E-RIHS philosophy. Authorship of the scientific results of the accesses will be shared by both parties. It is expected that scientific results will be published in a joint work between the user and the service provider.

Data policy and open science principles

In accordance with open science principles, it is expected that the data and publications resulting from the access will be deposited in open access repositories, with such limitations or embargoes as may be necessary to allow preferential exploitation of the results by their creators. Specifically, the mandates of the participating institutions in this regard will be respected.

VIII Final Report

At the end of the access, the user should provide a brief report highlighting the scientific objectives and results of the access received (with one/two images) following the template provided. The report may be published in E-RIHS.es. The report should be sent within two months from the end of the access to e-rihs@csic.es) For internal use of the Spanish ERIHS node, users will also be consulted to know their opinion about the quality of the research services offered by the laboratories of the platform.

IX Acknowledgments

Services provided in this call should be acknowledged in any publication as “This research has been funded by the E-RIHS Spanish node through CSIC Program for Large European Research Infrastructures 2022, grant INFRA20004 and by the [name of the provider].”

ANNEX I GLOSSARY

Access: refers to legitimate and authorized physical, remote and virtual admission, to the interactions and use of the research infrastructures and the services offered to users. Such access may be granted, among other things, at machine time, IT resources, software, data, data communication services, authentication services, sample preparation, archives, collections, creation, execution and dismantling of experiments, education and training, expert support and analytical services.

Best practices: the most significant experiences, procedures or actions, or in any case those which have made it possible to obtain the best results in the cultural heritage sector.

Equipment: the instruments supplied to a Facility.

Facility: the set of methodologies, data and high-level scientific tools to promote knowledge and innovation in the field of heritage sciences, offered to users by the *provider*.

Access grant: the access authorization obtained after the positive evaluation of the project.

Heritage Science is the interdisciplinary domain of the scientific study of cultural heritage. Heritage science draws on diverse humanities, sciences and engineering disciplines. It focuses on enhancing the understanding, care and sustainable use of heritage so it can enrich people's lives, both today and in the future. Heritage science is an umbrella term encompassing all forms of scientific enquiry into works of man and combined works of nature and man of value to people.

Research infrastructures: facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields. They include: major scientific equipment (or sets of instruments), knowledge-based resources such as collections, archives and scientific data, e-infrastructures, such as data and computing systems and communication networks and any other tools that are essential to achieve excellence in research and innovation.

Open Access: is a method of publication of the material produced by the research (scientific articles published in academic journals or conference proceedings, book chapters, monographs, or experimental data) that allows unrestricted (or with limited restrictions) legal access the intellectual property.

Peer Review Panel: is a group of experts, recognized for their experience in the field of conservation and scientific studies on cultural heritage, which evaluates the scientific content of projects and classifies proposals.

Provider: refers to the laboratory / body / institute belonging to E-RIHS.es in charge of providing access to the infrastructure and its services.

User Helpdesk: is aimed at providing technical and / or information assistance / support and, where necessary, acting as an intermediary between the user and the provider.

Users: For the purpose of this call, users are researchers in the field of Heritage Science belonging to public or private non-profit institutions (OPIs, Universities, Conservation Centers and Schools of BBCC, Museums, Foundations, etc.). They are engaged in creating new knowledge, products, processes, methods and systems and project management. Groups can include researchers, graduate students, technical staff and students who participate in research as part of their studies. **User group** refers to a research group of one or more researchers who have access to the infrastructure following the approved project proposal. A user group is led by a user group leader.